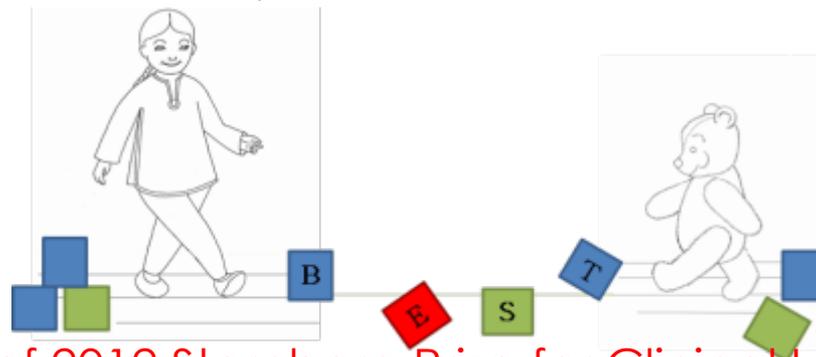


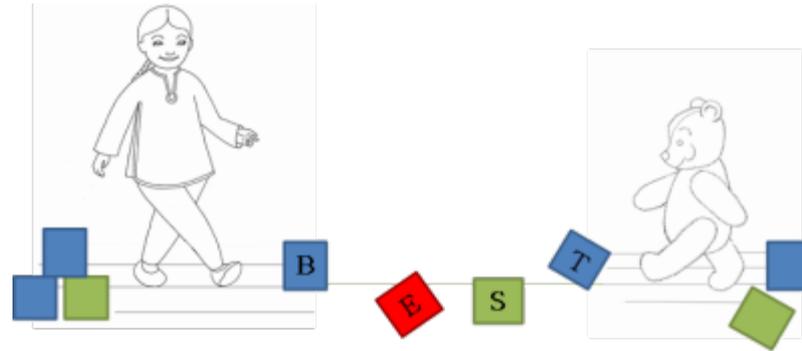
Developing the 'BEST'* intervention:

a constructivist, cross linguistic therapy approach to **'Building Early Sentences'** in pre-school children with Language Impairment

Dr Cristina McKean, Dr Sean Pert & Dr Carol Stow



*Winner of 2012 Sternberg Prize for Clinical Innovation



1. The context and drivers for innovation
2. Current stage of development & evaluation
3. The intervention & its rationale
4. The service evaluation results

1. The context and drivers



Social Disadvantage

> 75% adults in central districts living on benefits

High bilingual population

20% of primary school-aged children

Rising pre-school referral rates

>40% increase in previous five years

2. The context and drivers

An Evidence-base which is a poor fit for the population

Recasting, modelling approaches

Low parental engagement

Parent programmes

High drop out & lack of 'cultural flexibility'

Non-English interventions

Very limited intervention research

Adapted 'Derbyshire Language Scheme'

Limited evidence for effectiveness; low treatment fidelity; high drop out; highly variable outcomes; principles do not apply cross-linguistically

1. The context and drivers

The
researcher's
theoretical
perspective

A Neuroconstructivist approach
to LI

'Constructivist' / Usage Based
approach to Typical Language
Development

Emphasise

- Domain general processes
- Emerging specialisation & abstraction over development
- Importance of input & child cognition

2. The context and drivers

Evidence

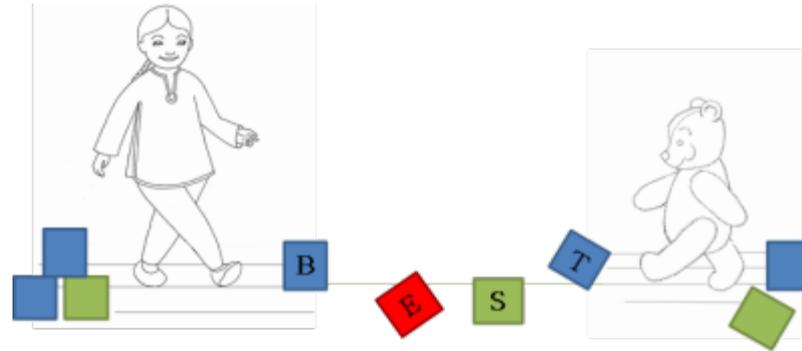


Practice

Need to develop a :

- Theoretically motivated
- Acceptable & accessible
- cross-linguistically applicable

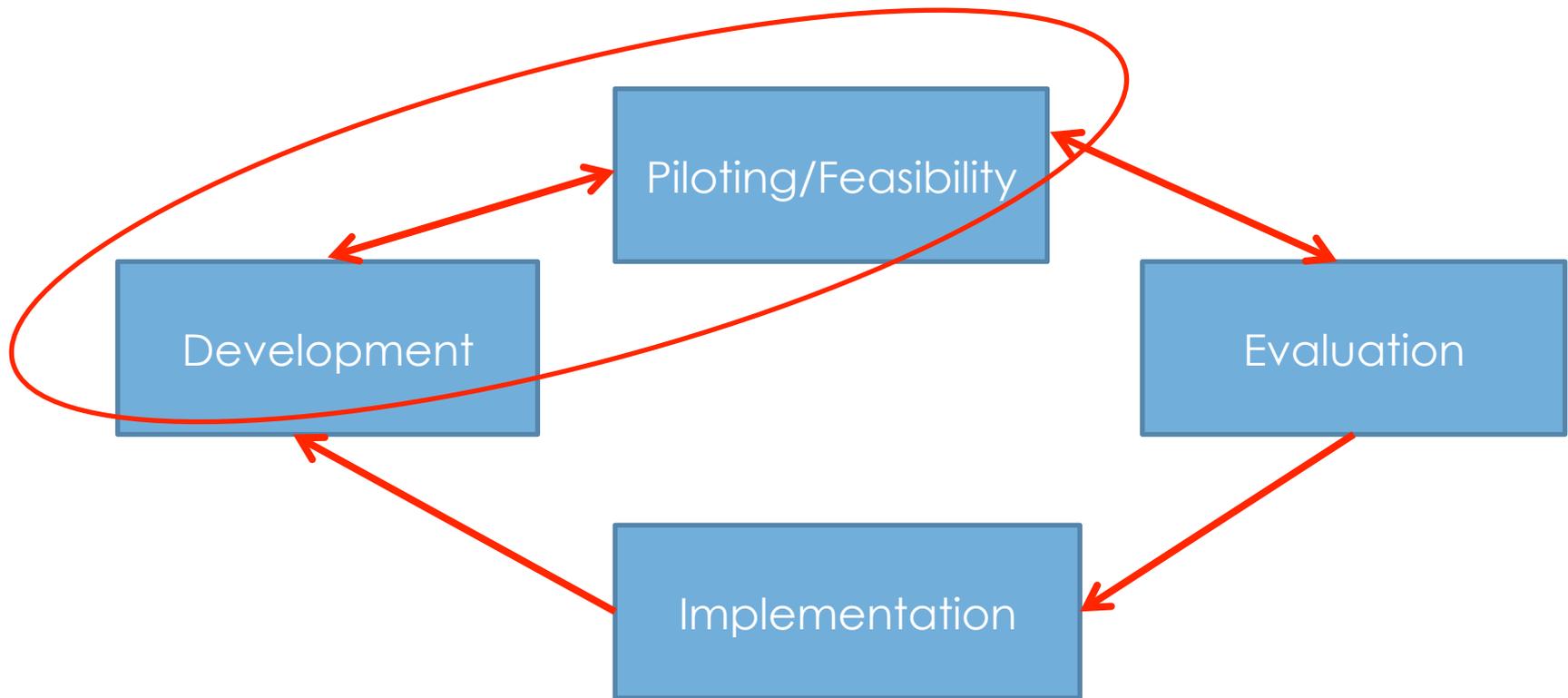
Intervention



1. The context and drivers for innovation
2. Current stage of development & evaluation
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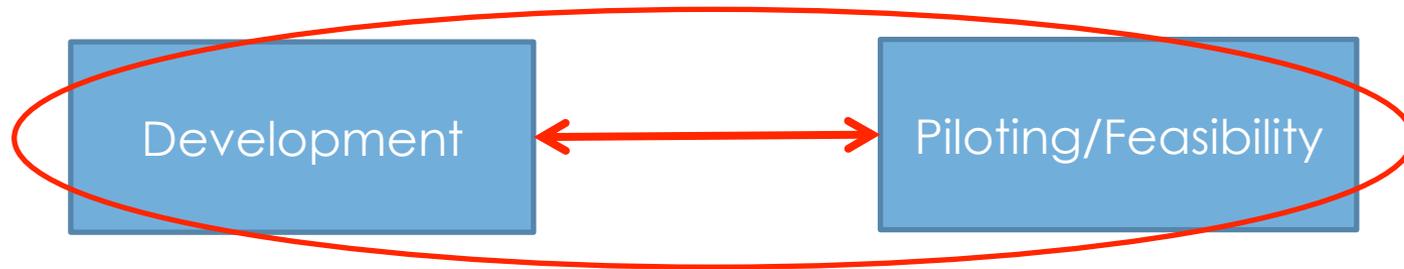
2. Current stage of development & evaluation

- Developing and Evaluating Complex Interventions: New Guidance. Medical Research Council (2008)



- Key elements in the development and evaluation process**

2. Current stage of development & evaluation

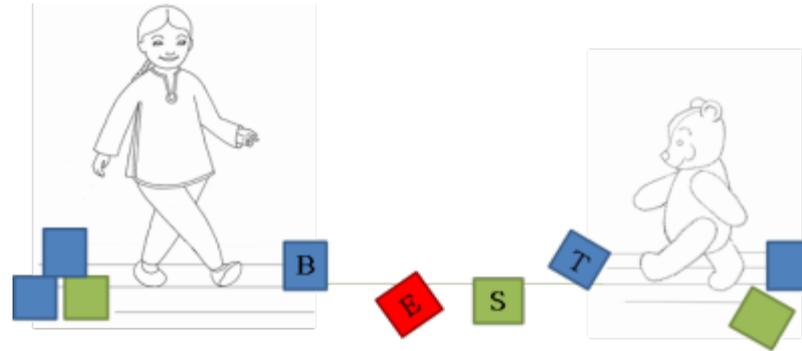


Research Processes

1. Identification of evidence base
2. Identification & development of theory
3. Model process
4. Model outcomes
5. Test procedures

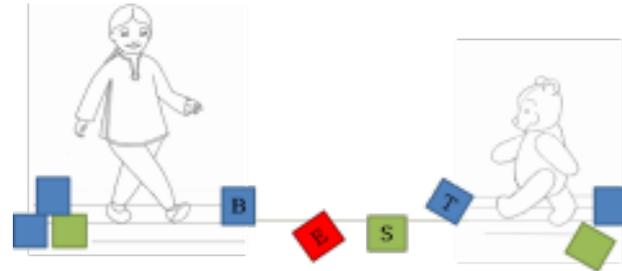
Research Questions

1. Is intervention associated with positive outcomes?
2. Who for?
3. Are the procedures acceptable and accessible to clients, carers and practitioners?



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3. The intervention & its rationale



- **BEST is.....**

- an SLT intervention
- for young children with Severe Language Delay (3; 06 – 6; 00)
- Aims to develop children's ability to
 - use range of simple 2, 3 and 4 element sentences
 - flexibly, with a range of verbs and nouns
 - and with appropriate grammatical morphology
- Can be used English and a number of Pakistani Heritage languages

3. The intervention & its rationale

Frozen
Phrases/item –
specific
constructions

Input



Cognition

Abstract
constructions/
paradigmatic
categories

3. The intervention & its rationale

Schematization

Categorisation

Cultural Learning

Analogy

Intention Reading

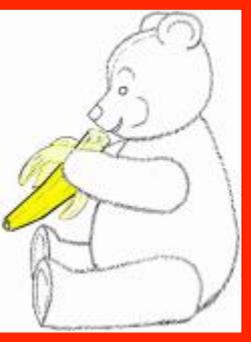
Distribution analysis



Cognition



Manipulates the **nature of the input** to support children with **Language Delay** to apply these **cognitive 'tools'** to language learning



3. The intervention & its rationale



Target sentences:



SV; SVO; SVA; SVOO; SVOA



Target Verbs:



11 sets of 'paired' verbs,

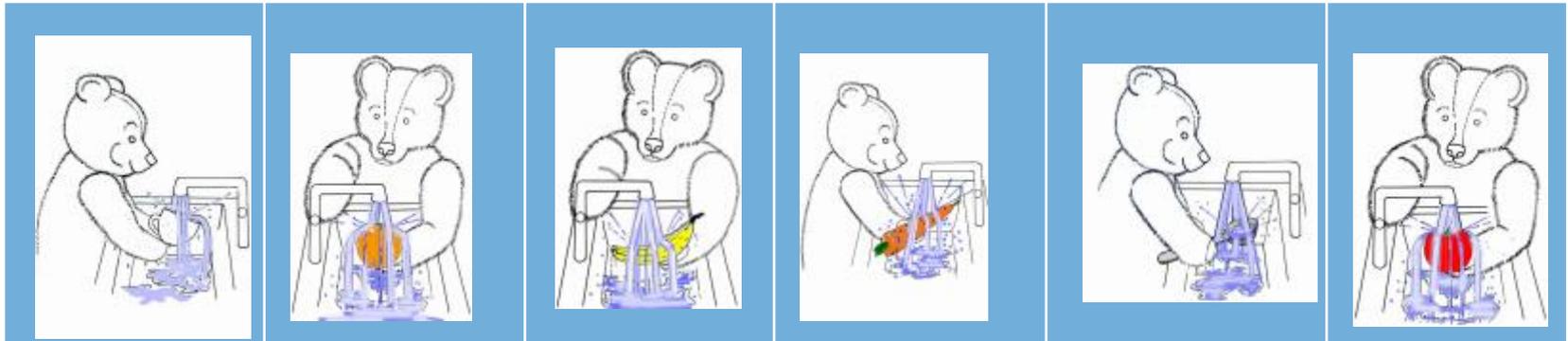
- with similar PAS
- plausibly combined with (mostly) same Ns



3. The intervention & its rationale

For each pair

1. Phase 1: Input with variation



2. Phase 2: Output with contrast & variation



3. The intervention & its rationale

Paiget Gorman signs

Set C – Eating

 the	 man	 is	 food	 -ing	 a	
The	man	is	eat	-ing	a/an	Y

The man is eating an apple

The man is eating an orange

The man is eating a banana

 apple	 orange	 banana
apple	orange	banana

3. The intervention & its rationale

- For the 11 verb pairs
- Input is **distributed**
 - 16 sessions (8 – 16 weeks)
 - 3 ‘verb pairs’ per session



- **Rotate** through ‘verb pairs’ over 16 sessions



- Focus on **Input**
- **Mastery** not required



3. The intervention & its rationale

- For parents/carers

Listen to Learn

B **E** **S** **T**



Building
Early
Sentences
Therapy

Homework
Booklet



The boy is riding a cat



The boy is riding a horse



The boy is riding a bike



The baby is riding a bike



3. The intervention & its rationale

Schematization

Categorisation

Cultural Learning

Analogy

Intention Reading

Distribution analysis



Cognition

- **Variation around verb**



Lieven *et al* (1997); Gomez *et al* (2002); Mandler (2000); Tomasello & Brooks (1998)

3. The intervention & its rationale

Schematization

Categorisation

Cultural Learning

Intention Reading



Analogy

Distribution analysis



- **Contrast between verbs with same PAS**

Childers & Tomasello (2001) Gentner et al (1995, 1997, 1998)

- **Non-overlapping sets in each argument structure role.**
- Gentner & Medina (1998)

3. The intervention & its rationale

Schematization

Categorisation

Cultural Learning

Intention Reading



Analogy

Distribution analysis

- **Consistent morphological frame**

Childers & Tomasello (2003); Ambridge & Lieven (2011)



- **Paget Gorman signs**

Leonard et al (2003); Leonard & McGregor (1992)

3. The intervention & its rationale

Schematization

Categorisation

Cultural Learning

Intention Reading



Analogy

Distribution analysis

- **Joint action routine with turn taking**

Tomasello (2003); Bedrova & Leong (2003)



3. The intervention & its rationale

Schematization

Categorisation

Cultural Learning

Analogy

Intention Reading

Distribution analysis

Mapping



Retention

- **Massed presentation**

Gray (2003, 2004); Riches *et al* (2005); Fey *et al* (2003)

- **Distributed presentations**

Ambridge *et al* (2006); Riches *et al* (2005); Janiszewski *et al* (2006)



3. The intervention & its rationale

Schematization

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Distribution analysis

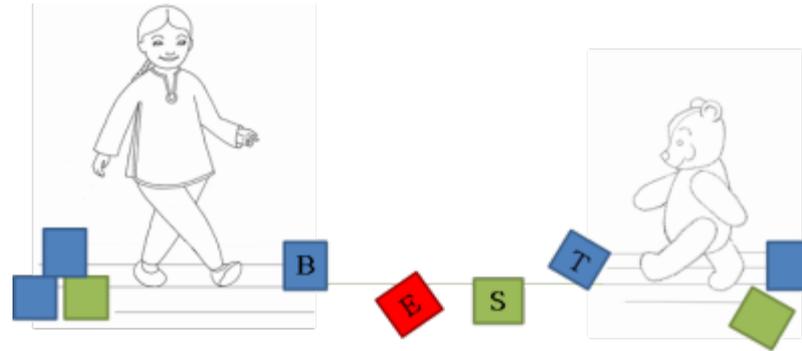
Mapping



Retention



- promoting cognitive mechanisms & manipulating input
- rather than translating an English intervention
- allows for cross-linguistic application



1. The context and drivers for innovation
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4. The service evaluation results

4. The Service evaluation results :

- **Participants:**

referred to SLT 3; 06 - 6 years over
~ 8 month period

spontaneous utterances limited
to only 1 or 2 clause element
structures in home language

limited grammatical morphology



4. The Service evaluation results

- **Measures & analysis of data:**
- **Progress Tracker:**
 - 4 data points
 - Score Number arguments
 - Score Number grammatical morphemes
- **Analysis**
 - Single case statistics- repeated-measures trend analysis for dichotomous data
 - (Howard cited in Marks & Stokes 2010)
 - Is there a significant improvement in scores?
 - (who does and doesn't improve?)



4. The Service evaluation results

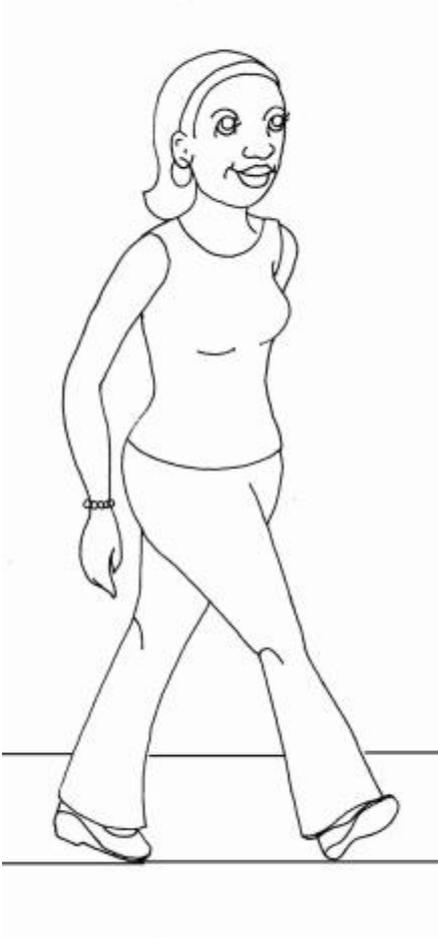
- **Results:** Single case statistics
- 32 returns - 18 complete data: 14 English 4 Mirpuri

Child		1	2	3	4	5	6	7	8	9	10	11	12	13	14
English	PAS	*	*	*	*	*	*	*	*	*	*	*	-	-	*
	Morph	*	*	*	*	*	*	*	*	*	*	*	*	*	-
Mirpuri	PAS	*	*	*	*										
	Morph	*	*	*	*										

- All children made significant progress
- 4 monolingual English 10 from multi-lingual backgrounds 4 mono-lingual Mirpuri speakers)
- 3 made progress in only 1 area

5. The Service evaluation

- **Results:** Practitioner Focus Groups

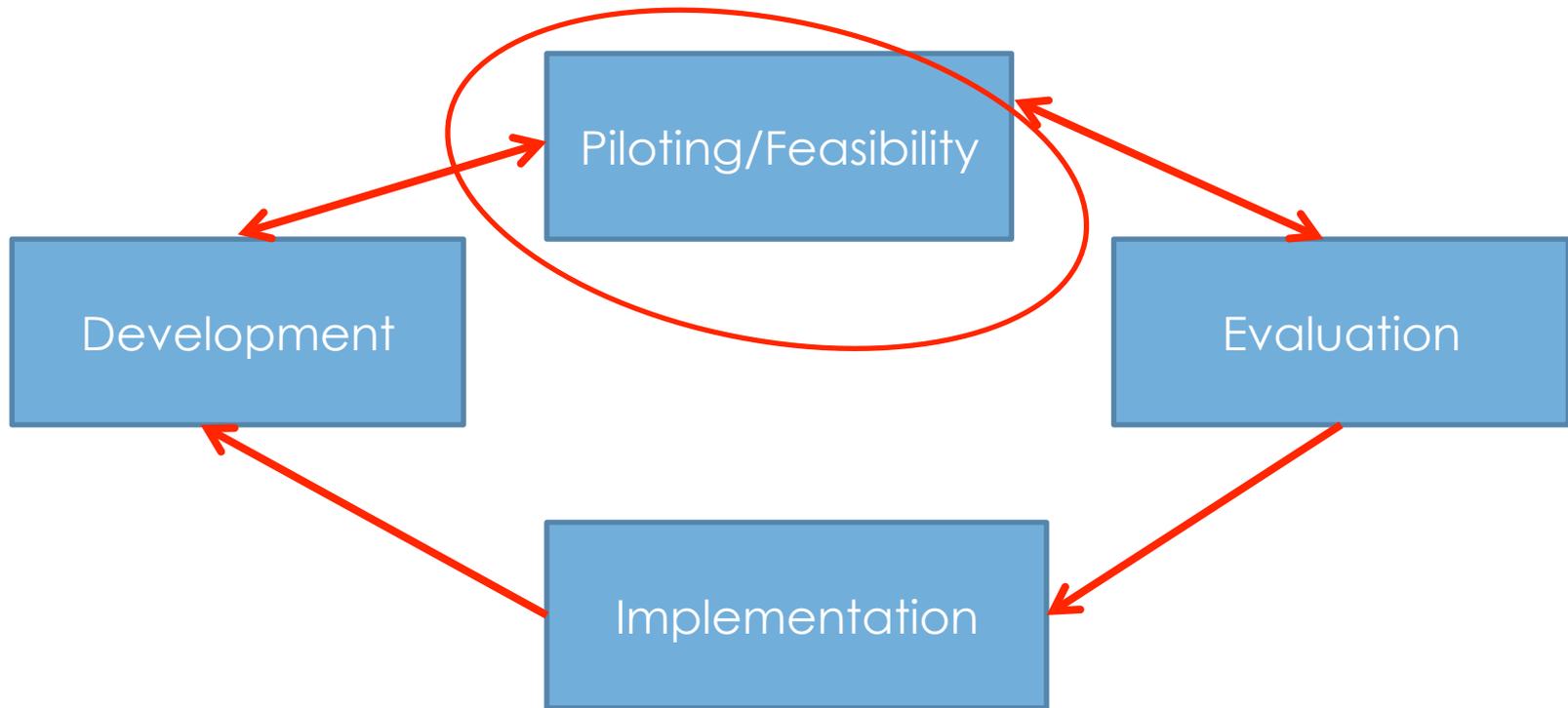
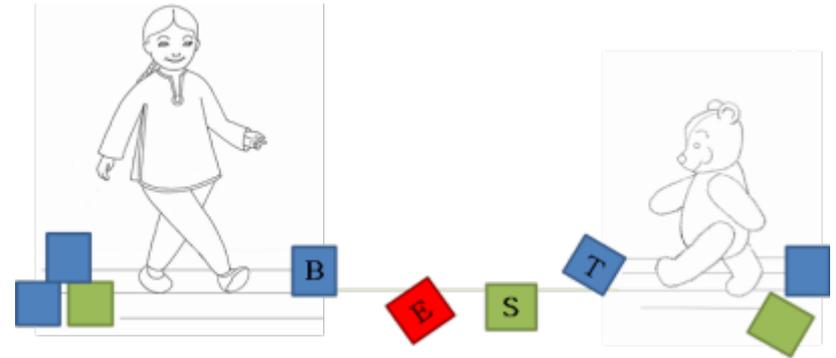


“It was really motivating because you could instantly see the results and the impact it was having. Previously you’ve been running groups and you’ve done stuff and you’ve kept doing the same stuff...Because you could see how quickly they have grasped it, it kept you motivated.”

“...and Dad was like ‘So actually can I have some homework and can I take it home?’ because he saw him achieving in sessions and he thought I can do that”

“Because it was structured with the family they appreciated that”

The future?



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